March 30, 2001 Vol. 40, No. 7

Spaceport News

America's gateway to the universe. Leading the world in preparing and launching missions to Earth and beyond.

http://www-pao.ksc.nasa.gov/kscpao/snews/snewstoc.htm John F. Kennedy Space Center

Mars Odyssey set for flight

The 2001 Mars Odyssey spacecraft is in its final assembly and testing stages at the Kennedy Space Center.

Set at press time to launch aboard a Delta 7925 from Launch Pad 17-A at 11:02:22 a.m. EDT on April 7, 2001 – the Mars Odyssey will map minerals and elements on the surface of Mars, study landforms, and evaluate the potential health risks of the Martian radiation environment for any future human explorers.

With the current launch date, the Mars Odyssey is set to arrive on the planet Oct. 24, 2001. Odyssey's primary science mission will take place January 2002 through July 2004.

Scientists hope to find evidence of shallow buried ice, which would provide clues to the abundance of water on the planet, Mars' climate history, and the availability of this key resource for any future human travellers to the red planet.

The three primary instruments carried by 2001 Mars Odyssey will be

• THEMIS (Thermal Emission Imaging System), for determining the distribution of minerals, particularly those that can only form in the presence of water;

• GRS (Gamma Ray Spectrometer), for determining the presence of 20 chemical elements on the surface of Mars, including hydrogen in the shallow subsurface, which acts as a proxy for determining the amount and distribution of possible water ice on the planet; and,

• MARIE (Mars Radiation Environment Experiment), for studying the radiation environment.

During and after its science mission, the Odyssey orbiter will also support other missions in the Mars Exploration program.

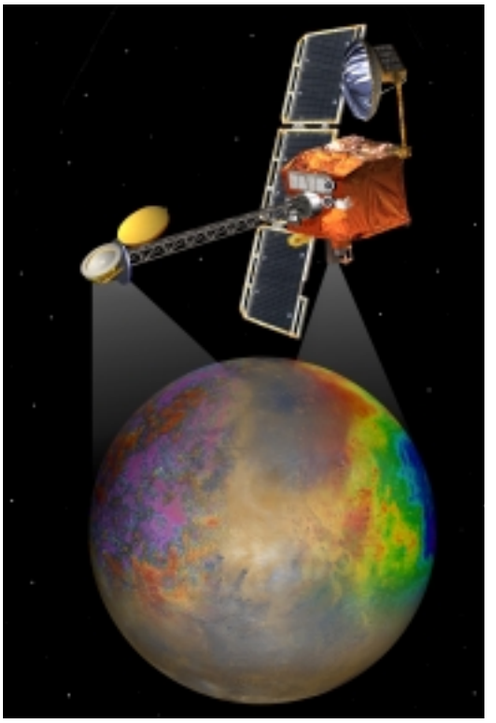
It will provide the communications relay for U.S. and international landers, including the next mission in NASA's Mars Program, the Mars Exploration Rovers, to be launched in 2003.

Scientists and engineers will also use Odyssey data to identify potential landing sites for future Mars missions.

2001 Mars Odyssey is part of NASA's Mars Exploration Program, a long-term effort of robotic exploration of the red planet.

The opportunity to go to Mars comes around every 26 months, when the alignment of Earth and Mars in their orbits around the sun allows spacecraft to travel between the two planets with the least amount of energy.

(See MARS, Page 8)



The 2001 Mars Odyssey will map minerals and elements on the surface of Mars, study landforms and evaluate Mars' habitability.

Inside

Page 2 – Fellowships featured in "Recognizing Our People."

Pages 3-5 – All-American Picnic sets the standard for family fun.

Page 6 – Athletic Training Seminar held.

Page 7 – Environmental & Energy Awareness Week.

Page 8 – Approval needed for Space Congress papers.

Raffaello prepared for STS-100 launch

In the Space Station Processing Facility, an overhead crane lifts the Multi-Purpose Logistics Module Raffaello off its workstand to move it to to a scale for weight and balance. Raffaello is the second MPLM built by the Italian Space Agency, and serves as a reusable logistics carrier and primary delivery system used to resupply and return station cargo requiring a pressurized environment. The MPLM will fly on mission STS-100, scheduled at press time to launch aboard Space Shuttle Endeavour from Launch Pad 39A at 2:41 p.m. EDT on April 19.

Recognizing Our People

NASA Fellowships awarded

Three KSC employees were recently selected to participate in the Agency-wide NASA Fellowships Program. The applicants were interviewed and selected by the Executive Development Education Panel at NASA Headquarters.

George M. Low Memorial Engineering Fellowship

The engineering fellowship is a full-time academic study program for one academic year beginning in the fall of 2001.

Recipient: Astrid Heard

Heard will be attending the University of Central Florida to obtain a Ph.D. in Applied Mathematics in Statistical Analysis Applications.

She is the senior statistician for NASA's Safety, Health, and Independent Assessment Directorate.

Heard began her KSC career in 1974 as a member of the design team for the Shuttle Launch Processing System. As a shuttle launch team member, she served as a certified master console test conductor for five years, covering over 25 launches.

Throughout her career, Heard has served as KSC program manager for Advanced Software, technical assistant for technology integration instrumentation, and lead of the JPMO Business Office. She has published extensively in the areas of Shuttle Operations and Intelligent Systems.

Head earned a bachelor of arts degree in mathematics in 1972 from the University of South Florida. She holds a master's degree in applied mathematics from Georgia Tech and a master's in engineering management from the University of Central Florida.

Heard enjoys traveling, reading, gardening and boating. She is also very interested in the preservation of the Florida ecosystem.

James E. Webb Space Administration Fellowship

The administration fellowship is a full-time academic study program for one academic year beginning in the fall of 2001.

Recipient: Patsy Leonard

Leonard will be attending Barry University/ Orlando to obtain a Ph.D. in Educational Leadership.

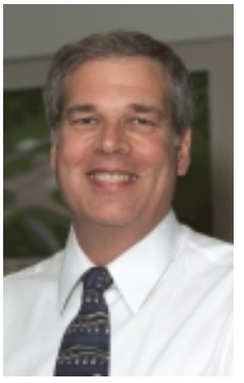
She is a university program specialist in the Education Programs and University Research Division of External Relations and Business Development. She is responsible for planning, developing, coordinating and managing Center and agency-wide College and University programs.

She began her KSC career as a co-op student in 1989. Upon graduation, she was hired as a budget/program analyst for the Chief Financial Officers' organization. She transferred to the Education Programs and University Research Division in May of 2000.

Leonard received a bachelor of arts degree in business administration from Bethune-Cookman College in 1990 and a master's degree in business administration from Florida Institute of Technology in 1996. Leonard enjoys mentoring high school and college students and community service activities. She is an 8-year sponsor of the Children's Christian Fund.

University of Michigan Management Development Program

The management development program is a two-week program with emphasis on leadership and management development.



Recipient: Larry Manfredi

Manfredi began his KSC career as a co-op student in 1971. Upon graduation, he was assigned to the Engineering Development Directorate where he worked as a mechanical systems engineer. He was the lead design engineer for several Shuttle facilities and was field engineer for Shuttle facilities activation.

Manfredi served as project engineer for various Shuttle, Payloads, and Space Station ground systems projects. He currently works in the Engineering Division of the ISS and Payloads Processing Directorate.

Manfredi received a bachelor of science degree in engineering from the University of Central Florida in 1974. He enjoys flying, hiking. canoeing and traveling.

All-American picnic 'sets standard'

Kennedy Space Center workers and their family and friends congregated at KARS I on March 17 for the annual All-American Picnic, a cornucopia of food and festivities.

Good weather and the annual picnic's reputation for delivering family fun drew a steady stream of KSC team members and their guests throughout the day. About 5,000 attended.

Organizers were pleased with the turnout and considered the event a success.

"The weather could not have been much better," said Bill Holden, co-chairman of the picnic committee. "We did well with presales, but the weather drew many additional attendees. I can't remember a bigger turnout."

Holden and his committee arranged for the return of a wide-range of ever-popular picnic activities from the children's animal petting area to a car show. They also revived the chili cookoff competition, which proved to be a popular draw at the picnic.

About 400 NASA and contractor volunteers, Joint Base Operations Support Contract staff and the KARS I crew joined forces with community partners to bring the event, which is funded by the NASA Exchange, to life.

Lackmann Culinary Services Inc. catered the picnic and provided a much more varied menu than in past picnics.

"Each year the picnic committee tries to refine the event to help make it bigger and better than ever," Holden said.

KSC team members and their friends and families appeared to thoroughly enjoy the event based on their smiles and comments.

Tim Hodge, an engineering designer with Dynacs Inc., said he, his wife, Chris, and two daughters, Hannah, 1, and Haley, 3, had a wonderful time checking out the multitude of activities at the picnic.

"They do a great job with this picnic," Hodge said. "It's a good family day."

United Space Alliance machinist Rochelle Sandridge attended the event with his wife, Shari, and daughters, Karly, 6, and Kayla, 9. The girls were psyched up before the picnic wanting to try out rock climbing again, Sandridge said.

"KSC sets the standard for family events with this picnic," Sandridge said. "We really appreciate the organizers creating an event like this for employees."

Appreciation like that is what makes all the long hours the volunteers and organizers put in worth it, said Holden.

"When you see the smiles on the faces of the children – that's the payoff. You know you did a good job," Holden said.

Above, Kennedy Space Center employees, their family and friends enjoy some of the many offering of the All-American Picnic. Groups settled down at picnic tables at KARS I, checked out vehicles on display and enjoyed the petting zoo and pony rides.

See more All-American Picnic photographs on pages 4 and 5.

Scenes from the A

ll-American picnic

All-American Picnic story and more photographs on page 3.

Right athletic training helps heal injuries

RehabWorks is a free on-site musculoskeletal rehabilitation service for employees suffering from a work, non-work or sports-related injury. Any badged Kennedy Space Center or Cape Canaveral Air Force Station employee may take advantage of RehabWorks.

Athletic training might seem more applicable to the astronauts than Kennedy Space Center employees, but that was not evident at the symposium held March 16 in the KSC Training Auditorium.

Many employees stopped by the auditorium to hear about athletic training as well as injuries and treatment for the knee, achilles tendinitis, back and neck pain and other presentations by physicians, surgeons and certified athletic trainers (ATC).

It was part of the first annual Athletic Training Symposium held by KSC RehabWorks, in honor of National Athletic Training Month. The focus of the symposium was the value and benefits gained by all employees in having certified athletic trainers at the workplace.

Anyone who watches sports events recognizes the sudden appearance of an ATC when an athlete incurs an injury. The ATC might massage a cramped muscle, bandage a blister or a cut, or wrap a sprained ankle.

The benefits of such rapid treatment need not be restricted to professional athletes, however. In fact, certified athletic trainers can now be found on high school and college campuses, hospitals and clinics, and the corporate/industrial workplace.

RehabWorks is a free on-site musculoskeletal rehabilitation service for employees suffering from a work, non-work or sports-related injury.

Any badged KSC or Cape Canaveral Air Force Station employee may take advantage of RehabWorks.

According to Mary Kirkland, supervisor of KSC RehabWorks, since the facility's inception in 1997, it has "treated 2,140 employees and logged 7,818 patient visits for such problems as strains and sprains, low-back pain, carpal tunnel, post-operative knee and shoulder injuries, and more."

If injuries occur while at work, employees (called industrial athletes by staff) can have rapid evaluation by a certified athletic trainer and/or physician, possibly forestalling complications or more serious damage than if treatment were delayed.

"When we get a rapid referral by the clinic or Occupational Health Facility," said Kirkland, "we can do immediate treatment such as ice or electrical stimulation, give information on home treatment and basic exercises, and plan future rehabilitation onsite. For some acute injuries, like a severe ankle sprain, we might want to bring the person in every day."

Kirkland emphasized also that being able to provide rehabilitation therapy for employees with injuries or after surgeries enables them to return to work with less lost worktime for therapy elsewhere.

If the injury is non-work related, employees can go to the Occupational Health Facility to obtain a Fitness Center Medical Clearance Form, then call RehabWorks to set up an appointment. RehabWorks is located in the O&C, Room 1103.

It is open Monday – Friday, from 7 a.m. to 5 p.m. (the last appointment is 4 p.m.).

The current staff under Mary Kirkland at RehabWorks includes the assistant athletic trainer Erik Nason, interns Nina Hsieh, from Cal State-Fullerton, Calif., and Sara Stewart from Florida Southern College, and medical records clerk Amy Rembert. Nason and Hsieh are both certified athletic trainers.

Dr. Art Arnold, with The Bionetics Corp., is the supervising physician. He is manager of medical operations for KSC's Life Sciences Support Contract.

KSC Rehab Works staff greet employees and answer questions at the recent Athletic Training Symposium.

What is a certified athletic trainer?

To be certified, candidates must have completed a four-year degree including courses in anatomy, physiology, nutrition, pharmacology, psychology and rehabilitation methods, plus pass a board-certified exam.

They work under the direction of a licensed physician and in cooperation with other healthcare professionals.

Vendors and exhibitors at the symposium were Micro Bio-Medics, Inc., School Health, Extreme Sports, Bob's Bicycle Shop, The Athletic Trainers Association of Florida (ATAF), CHS/Occupational Health, KSC Fitness Centers, Parrish Sports Medicine and Rehabilitation, Parrish Hospital, GNC, Massage Therapy Associates of Brevard and Total Gym.

Sponsors for the event were Bionetics, ATAF, Micro Bio-Medics, Inc., School Health and Total Gym.

For more information about RehabWorks, visit the Web site **http://rehabworks.ksc.nasa.gov/rehab** or for information about certified athletic training, go to **http://www.nata.org/main.htm** .

Energy conservation important all year

Most of us spend very little time thinking about how much energy is used here at Kennedy Space Center, what the costs are, and who pays for it. But KSC Energy Manager Wayne Thalasinos would like to see all employees take note of their habits and surroundings, in an effort to trim excess energy usage.

Each October is Energy Awareness Month, and Environmental & Energy Awareness Week, highlighted by Earth Day, is just around the corner. But ideally, employees should be aware of energy conservation year-round, especially in light of the increasing costs of electricity, natural gas, fuel oil and gasoline.

Above and beyond rate increases already implemented last year by the utility companies that serve KSC, rates have soared even further upward this year and will again rise even further than originally anticipated.

"Florida Power & Light (FPL), KSC's largest energy provider, recently announced a new rate increase effective April 2001," explained Thalasinos. "This unexpected increase is a result of continued high fuel costs, and because utilities pass fuel costs on to those who buy power from them, our energy cost will increase."

Because NASA-KSC has finite monetary resources, paying for energy waste takes away funding from other programs and projects.

The budget concern surrounding the International Space Station (ISS) is a case in point.

While the construction of ISS is a daunting and expensive task, it is a major investment in the future of humankind. Any small effort to protect it not only helps to protect the livelihood of those working on the project, it also will result in a final product that will better benefit the world.

Just like all of us, KSC pays for the energy it consumes, and as taxpayers, we all contribute to the payment. The box lists a few painless steps employees can take to reduce our energy bill.

Also, managers and supervisors can look at their operations and consider reevaluating any lighting or temperature requirements, and make a habit to note and take action on energy waste spotted during periodic safety walkdowns.

Henry Healey of the Energy Management Office checks the energy-saving photo-voltaic system powering a warning sign on Phillips Parkway.

Thalasinos is also quick to point out that an effort to conserve energy doesn't mean cutting corners on safety or comfort: "We're not asking anyone to work in a hot office all day, or walk through a dark parking lot because we don't want to turn on the lights. We just want to cut down on the amount of energy being wasted, such as for lights and equipment left on unnecessarily, and air conditioner and heating inefficiencies."

The challenges of energy conservation are nothing new to the KSC Energy Working Group, formed in 1991. The group meets at least once a month to monitor the center's energy usage, create consumption forecasts and budgets, and devise plans and take actions to reduce excess usage and cost.

In the years since its inception, the group has worked hard to identify lighting and temperature control problems, retrofit the most troublesome systems, and stock more efficient supplies for future use. The group has also worked to decrease costs from energy suppliers such as FPL and City Gas.

But, points out Thalasinos, the group cannot shoulder the entire burden of reducing costs.

"Becoming more energy conscious is just a matter of personal habit," says Thalasinos. "If everyone would pay just a little more attention to their actions, and be more aware of how energy is being used in their work area, we could make great progress together towards eliminating waste and reducing costs."

If you have suggestions for the Energy Working Group, please contact Wayne Thalasinos at 867-8415.

Good Energy Habits

- **Turn off equipment (monitors, printers, lighting, TVs, radios, fans, etc.) when away for meetings or lunch. Cute screen savers don't save energy – if the monitor doesn't automatically sleep, turn it off manually.**
- **Turn off above items at the end of the work shift, along with the entire computer, printers, copy/fax machines, coffeepots, decorative lighting, etc.**
- **When automatic lights or equipment that appear to be wasting power are noted, or if the temperature controls in the work area don't seem to be working properly, please place a trouble call to SGS, USA or Boeing.**

Environmental & Energy Awareness Week

Please join us in celebration of Environmental & Energy Awareness Week April 17-20 at KSC, CCAFS, and PAFB. More than 70 environmental and energy awareness booths and a number of presentations will be featured. Some of the vendors will be conducting drawings and giving away door prizes. Check out the alternative fueled vehicles and the Osram Sylvania 48-foot LightMobile. Brevard Zoo, Audubon Birds of Prey, Gatorland, Friends of the Enchanted Forest, Florida Fish & Wildlife Conservation, National Parks Service, and Save the Manatees will also make a presence this year.

To see the latest list of vendors/presentations, schedule, drawings, and more, see **http://environmental.ksc.nasa.gov/eeaw01/index.htm**. For more information contact Barbara Naylor, 867-8453, or Wayne Neville, 494-9268.

April is Litter Awareness Month

April has been designated as "Litter Awareness Month" at the Cape Canaveral Spaceport.

Litter costs taxpayer dollars to clean up and wastes resources that can be used to support the Spaceport's core missions. KSC team members need to work together to prevent litter because randomly discarded trash, even items as small as cigarette butts, endangers safety, the environment, wildlife and possibly even operations.

The Florida Statute prohibits littering and allows for fines up to $50. Members of the military and Dept. of Defense civilians can be reprimanded for litter violations.

Our Spaceport attracts visitors who come to appreciate the grandeur of our launches and technology. They should also be able to enjoy the natural beauty of our environment.

NASA and NIMA look at Mars images

NASA and the National Imagery and Mapping Agency (NIMA) recently said researchers from the two agencies will continue a joint review of the initial results of NIMA's search for the missing Mars Polar Lander.

This analysis is extremely challenging, and has thus far produced no definitive conclusions.

NIMA researchers used high resolution imagery from NASA's Mars Global Surveyor spacecraft, now in orbit around the Red Planet, in their effort to locate the lander and its components, including a protective aeroshell, heat shield and parachute.

One of the principal challenges in locating the missing lander using images from the orbiter is that the Mars Polar Lander is only somewhat larger – about six and a half feet across – than the smallest objects the orbiter's camera can see on the surface of Mars.

In an initial analysis, NIMA researchers reviewed and assessed features seen in several images that they believe could be indicative of the lander and its protective aeroshell.

An alternative view presented by NASA is that these features could be noise introduced by the camera system, so further work between NASA and NIMA will be conducted to address differences of interpretation.

Both agencies intend to continue working together on the analysis of these images and of additional images of the landing site, which will be collected later this year.

The Mars Polar Lander was lost during its attempted landing on Mars, Dec. 3, 1999. Within two weeks, NASA began obtaining high resolution images of the intended landing site using the camera onboard the orbiting Mars Global Surveyor.

FSRI collaborates with KSC

The Florida Space Research Institute (FSRI) and NASA Kennedy Space Center (KSC), under a cooperative agreement signed recently, will collaborate on FSRI's Advanced Learning Environment (ALE) initiative.

ALE incorporates cutting-edge NASA and military web-based education and simulation technologies into a revolutionary new learning environment designed to prepare space industry scientists, engineers and technicians for tomorrow's technology challenges.

"I see great synergy between Florida's simulation and space industries, both of which have been among the top high-tech enterprises in our state," said Florida Lt. Governor Frank Brogan. "This program can leverage the strengths of each industry to solve training problems facing our state's most important high-tech economic sectors."

Under the agreement, FSRI and NASA will develop, test and evaluate a prototype web-based "advanced distributed learning" environment for cryogenics engineering at KSC. The project will involve the development of a consortium of public and private universities designed to support KSC's research, and will allow Florida's colleges and universities to incorporate these technologies to enhance their science and engineering education programs.

"NASA is very excited about the potential outcome of this partnership with FSRI," said KSC Director Roy Bridges. "We need a highly skilled workforce to accomplish our goals for space exploration and commerce, and this project will help us take a big step forward in learning technologies."

The NASA agreement with FSRI provides a $500,000 matching contribution to the second phase of FSRI's $1.4 million ALE contract with Workforce Florida Inc.

Special Edition coming

The next edition of *Spaceport News* will be published on April 12, the 20-year anniversary of the first Space Shuttle launch. The 8-page commemorative edition highlighting the launch will be printed in color.

MARS ...

(Continued from Page 1)

Since the first close-up picture of Mars in 1965, spacecraft voyages to the red planet have revealed a world strangely familiar, yet different enough to challenge our scientific perceptions of what makes a planet work.

Over the past three decades, spacecraft have shown us that Mars is rocky, cold and sterile beneath its hazy, pink sky. We've discovered that today's Martian wasteland hints at a formerly volatile world where volcanoes once raged, meteors plowed deep craters, and flash floods rushed over the land.

The name "2001 Mars Odyssey" was selected as a tribute to the vision and spirit of space exploration as embodied in the works of renowned science fiction author Arthur C. Clarke.

Evocative of one of his most celebrated works, the name speaks to humankind's hopes for the future and of the fundamental human desire to explore the unknown despite great dangers, the risk of failure and the daunting, enormous depths of space.

John F. Kennedy Space Center

Spaceport News

Spaceport News is an official publication of the Kennedy Space Center and is published on alternate Fridays by the Public Affairs Office in the interest of KSC civil service and contractor employees.

Contributions are welcome and should be submitted two weeks before publication to the Media Services Branch, XAE-1. E-mail submissions can be sent to Katharine.Hagood-1@ksc.nasa.gov

Managing editor. . . . . Bruce Buckingham
Editor. . . . . Kathy Hagood

Editorial support provided by InDyne Inc. Writers Group.
NASA at KSC is located on the Internet at *http://www.ksc.nasa.gov*

USGPO: 633-096/00052